

095724-05300

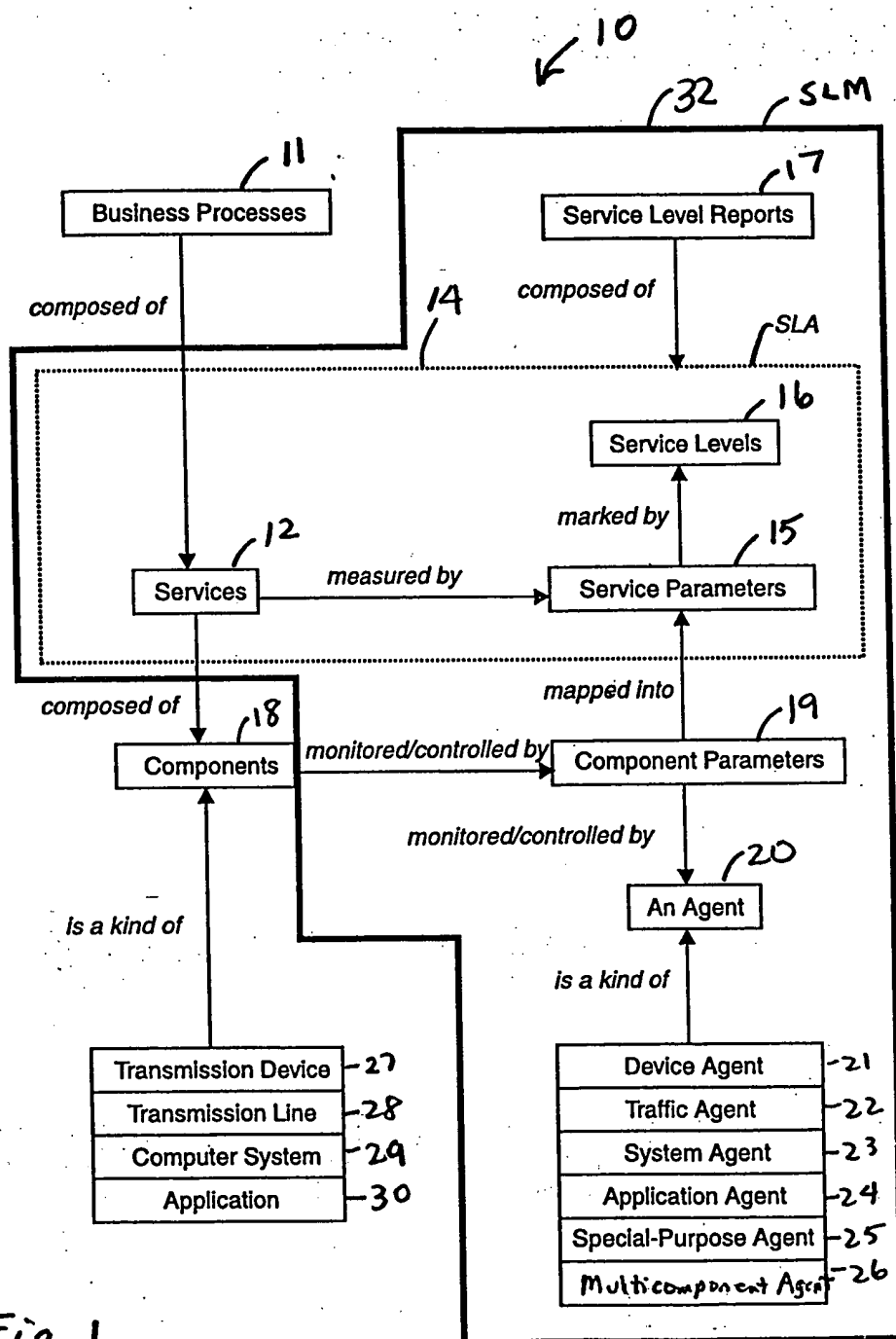


Fig. 1

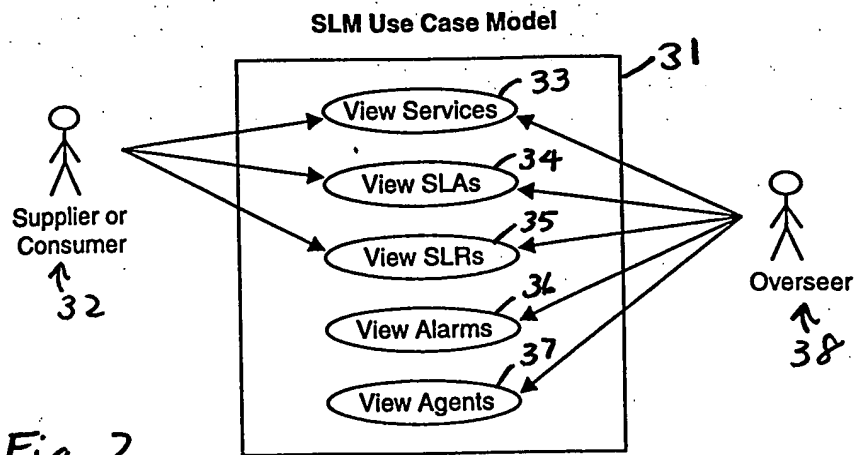


Fig. 2

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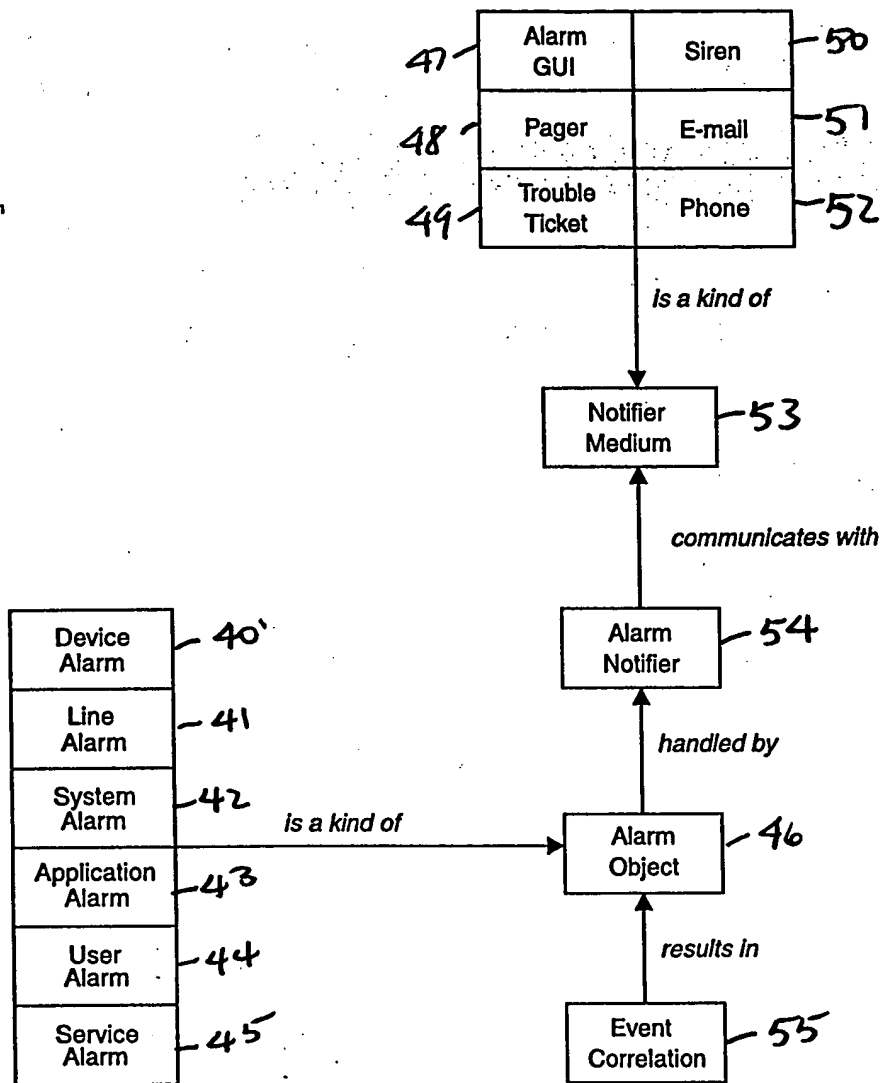
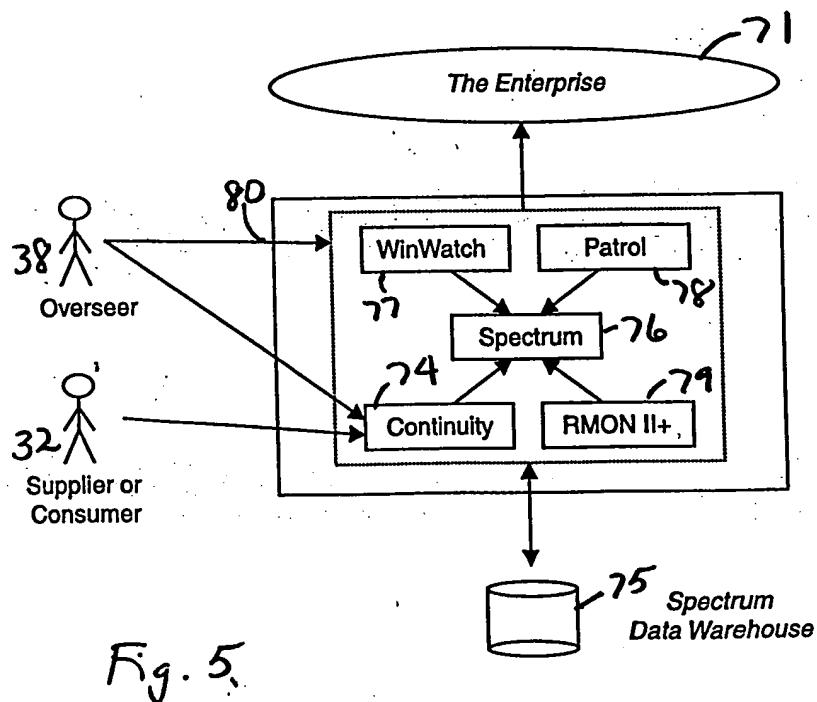
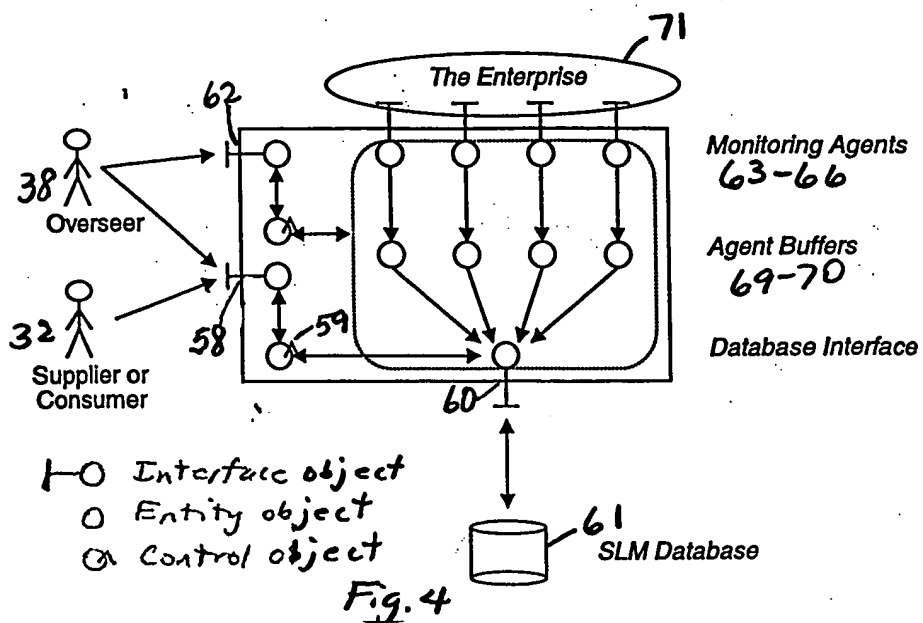


Fig. 3

09577224-052300



```
graph TD; 82[Monitoring Subsystem] --> 83[Reporting Subsystem]; 82 --> 84[Alarm Management Subsystem]; 82 --> 85[User Interface Subsystem]; 83 --> 85; 84 --> 85;
```

The diagram illustrates a monitoring system architecture. At the top is the **Monitoring Subsystem** (labeled 82). It has three output paths: one to the **Reporting Subsystem** (labeled 83), one to the **Alarm Management Subsystem** (labeled 84), and one directly to the **User Interface Subsystem** (labeled 85). Both the **Reporting Subsystem** and the **Alarm Management Subsystem** also have output paths to the **User Interface Subsystem**.

Fig. 6

```

graph TD
    Enterprise([Enterprise 100])
    Sensors[Sensors 101]
    L0[Level 0 Behavior 102]
    L1[Level 1 Behavior 103]
    L2[Level 2 Behavior 104]
    L3[Level 3 Behavior 105]
    Effectors[Effectors 106]

    Sensors --> L0
    L0 --> L1
    L1 --> L2
    L2 --> L3
    L3 --> Effectors

    Sensors --> Enterprise
    Effectors --> Enterprise
  
```

Fig. 8

Level 2 Abstraction,  
Reasoning, Instruction

Level 1 Abstraction,  
Reasoning, Instruction

Level 0 Abstraction,  
Reasoning,  
Instruction

Monitoring

Auto  
Control

Human  
Control

Fig. 9

The Enterprise 114

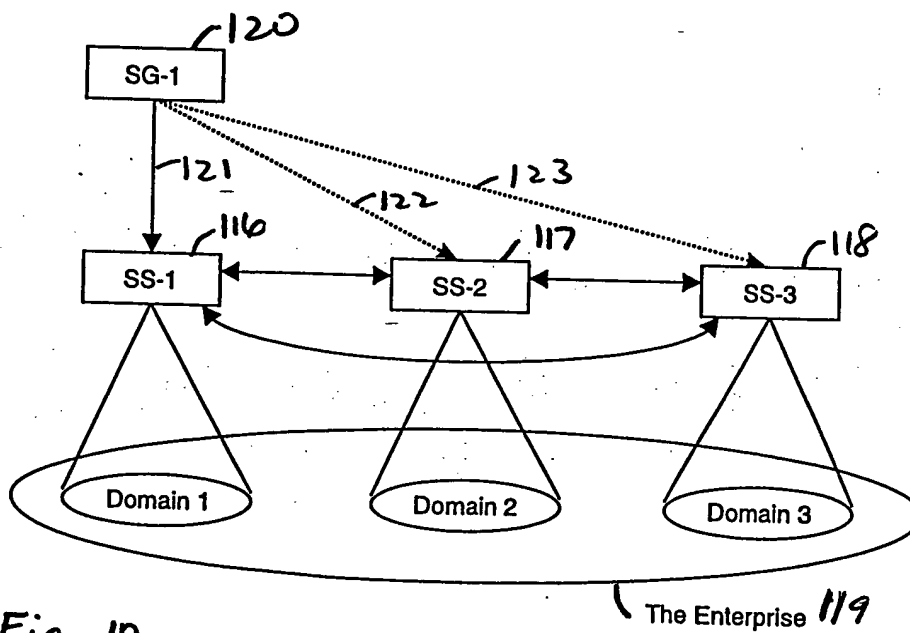
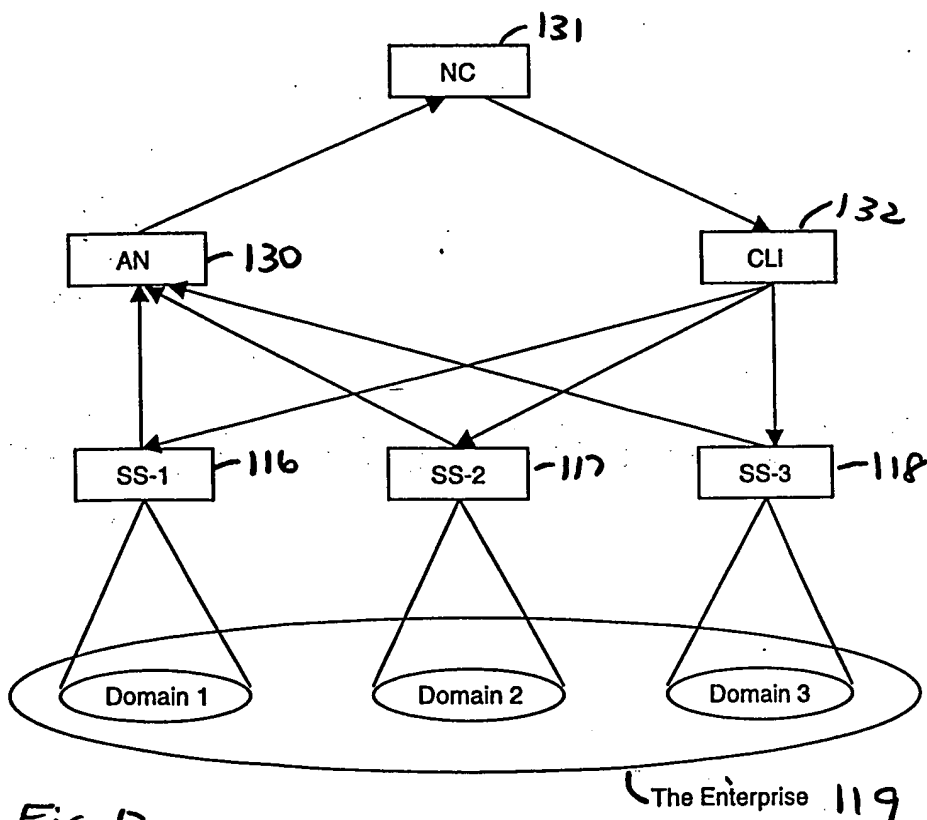
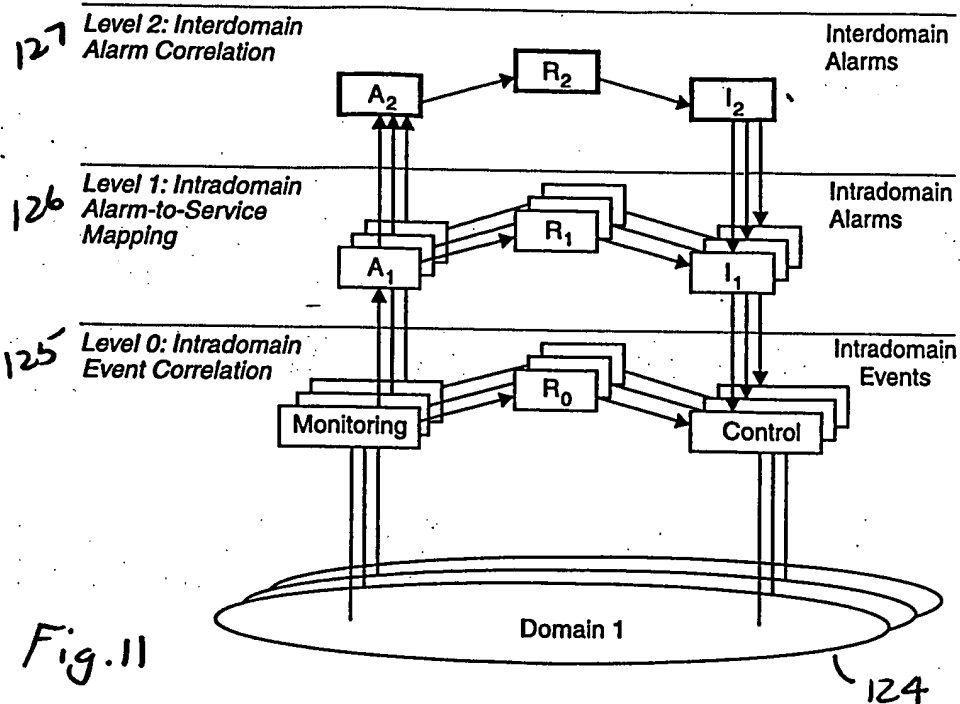


Fig. 10

The Enterprise 119

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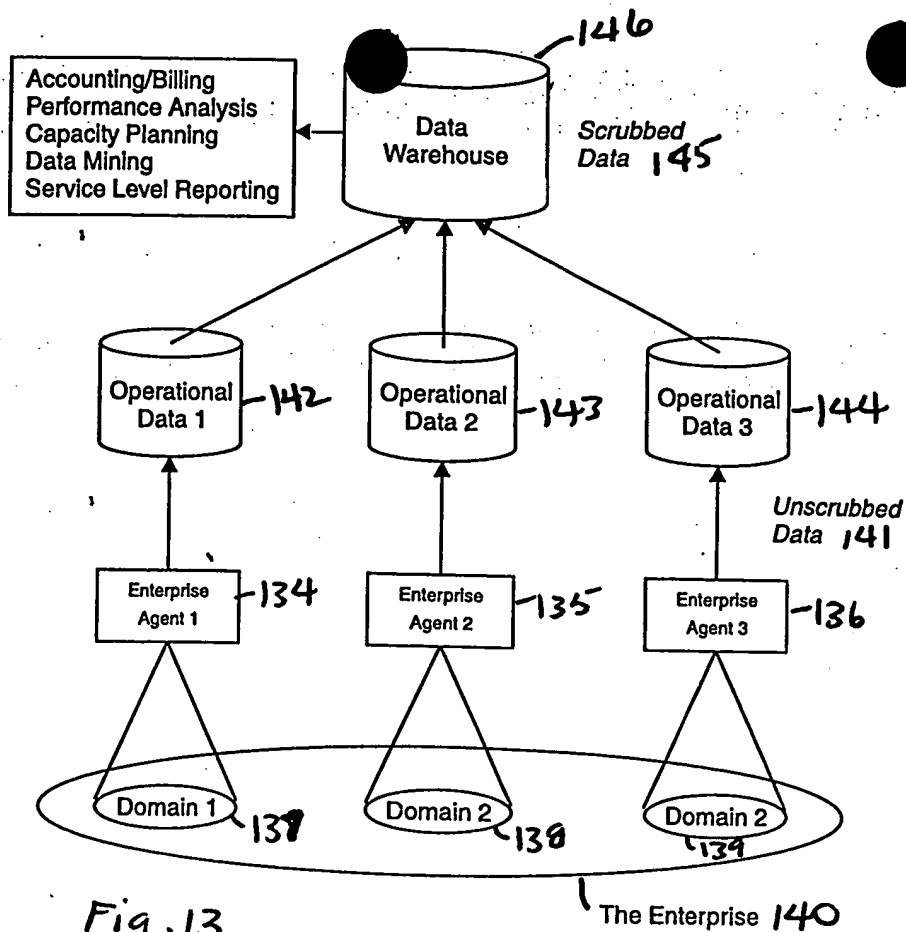


Fig. 13

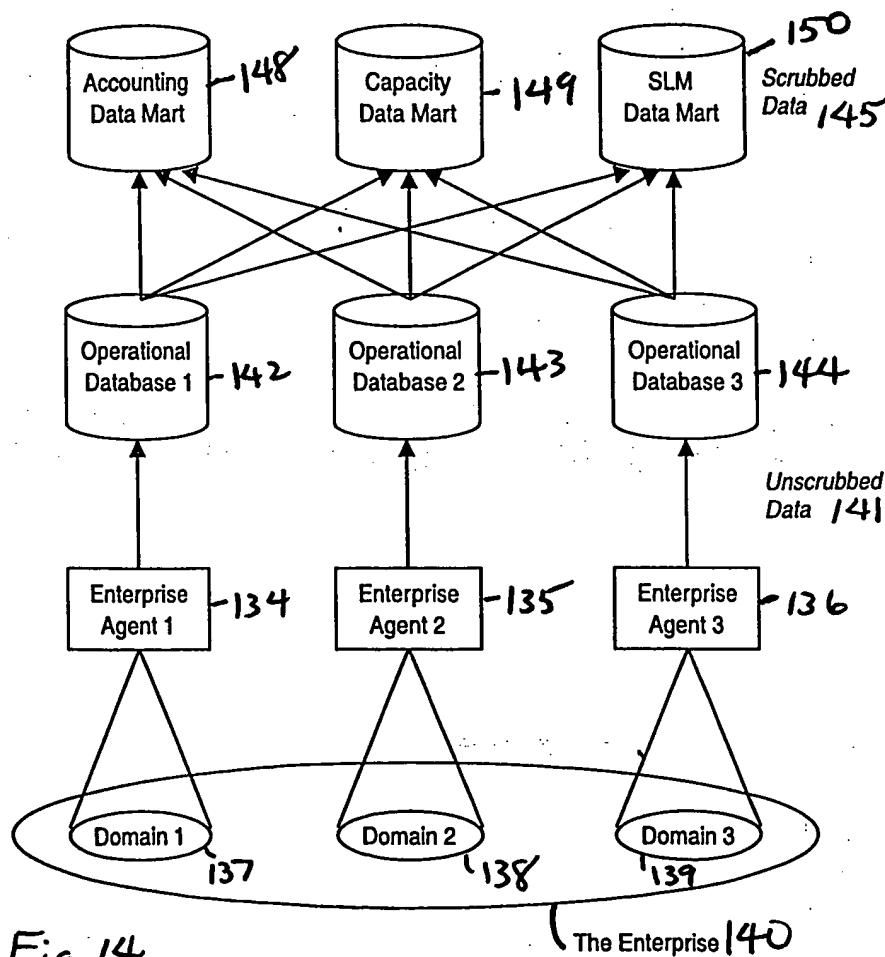


Fig. 14

```

graph TD
    subgraph Enterprise [The Enterprise 140]
        direction TB
        subgraph Domains
            D1((Domain 1 137))
            D2((Domain 2 138))
            D3((Domain 3 139))
        end
        EA1[Enterprise Agent 1 134]
        EA2[Enterprise Agent 2 135]
        EA3[Enterprise Agent 3 136]
        D1 --- EA1
        D2 --- EA2
        D3 --- EA3
    end

    EA1 --> OD1[(Operational Database 1 142)]
    EA2 --> OD2[(Operational Database 2 143)]
    EA3 --> OD3[(Operational Database 3 144)]

    OD1 --> DW[(Data Warehouse 147)]
    OD2 --> DW
    OD3 --> DW

    DW --> ADM[(Accounting Data Mart 148)]
    DW --> CDM[(Capacity Data Mart 149)]
    DW --> SLM[(SLM Data Mart 150)]

    subgraph Data
        ADM
        CDM
        SLM
    end
    style Data fill:none,stroke:none

```

Fig. 15

The diagram illustrates a distributed system with two nodes, N1 and N2, connected by a link L. Node N1 contains a stack of U1, C1, and S, and a component CS1. Node N2 contains a stack of U3, C3, and CS3, and a component CS4. Both nodes also have a component CS2. The link L connects R1 and R2.

Figure 5.1, Fig. 16

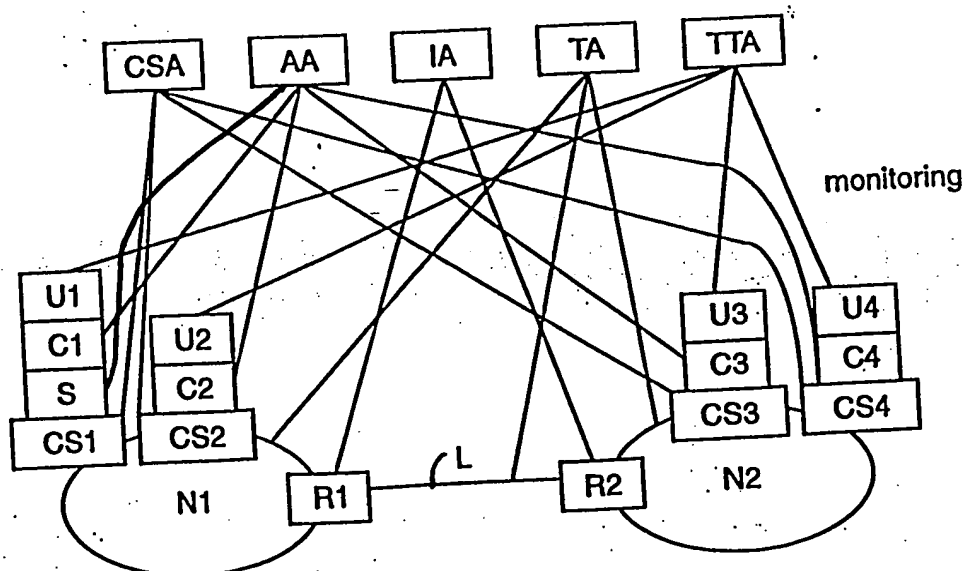


Figure 5.2 *Fig.17*

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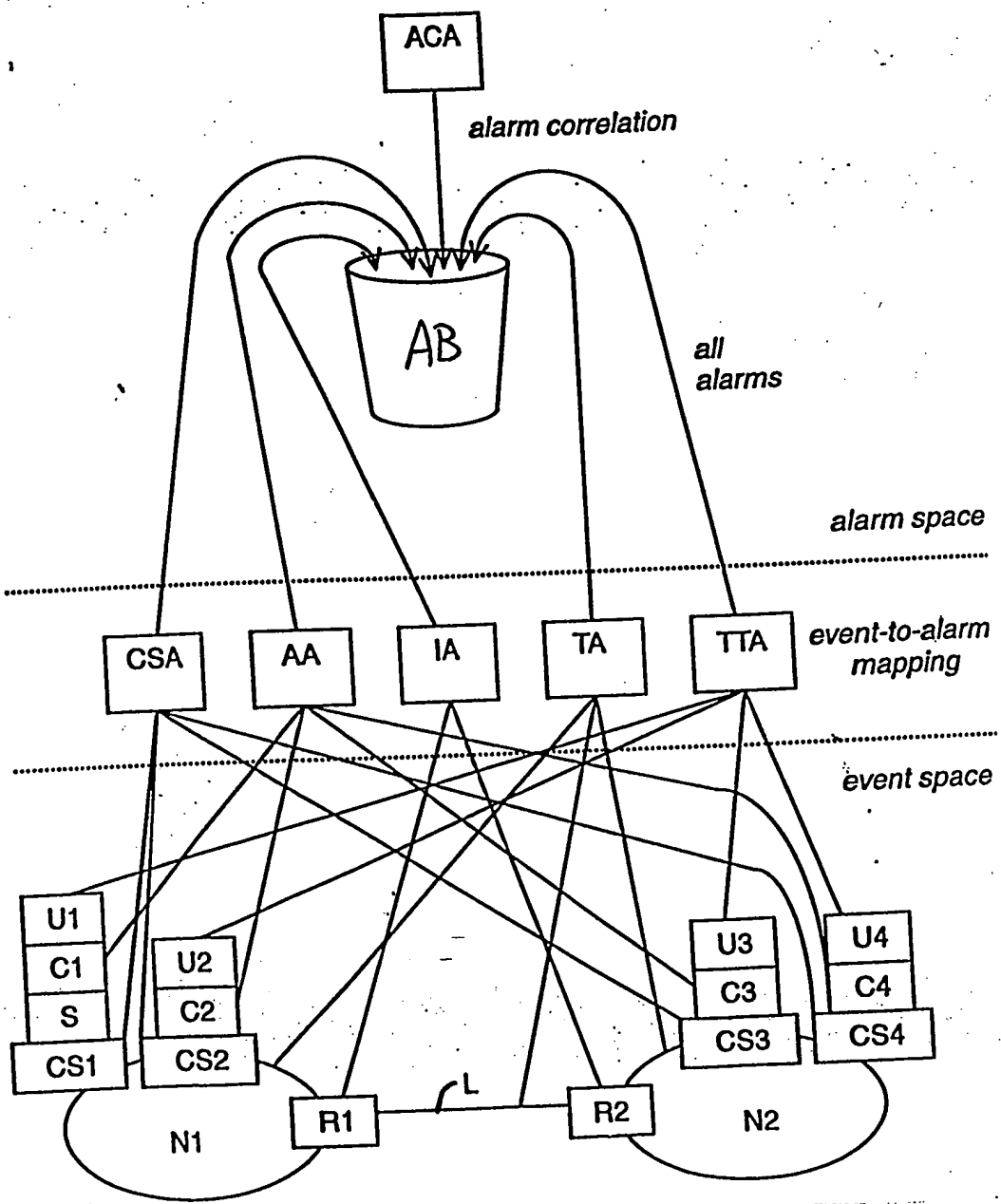


Figure 5.5

Fig. 18

Fig. 19

Detect events in  $\sim 160$   
the network

↓  
For each aspect of network  $\sim 161$   
operation, map event(s) to  
alarm(s)

↓  
Output alarms to  $\sim 162$   
alarm bucket

↓  
Correlate/Evaluate alarms to  $\sim 163$   
determine network operation  
status

↓  
Report Network operation  $\sim 164$   
status

↓  
Identify corrective actions  $\sim 165$   
necessary for desired operation of  
network

↓  
Implement corrective  $\sim 166$   
actions or report identified  
corrective actions

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Fig. 20

Detect events for ~167  
a specific aspect of network  
operation



Map detected events ~168  
to an alarm or alarms



Output alarm or ~169  
alarms

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The diagram illustrates the architecture of an expert system. A vertical dashed line separates the **the world** (left) from **the agent** (right). The world is labeled with the number 175, and the agent is labeled with the number 170. Within the agent's domain, three components are shown: **Working Memory**, **Reasoning Algorithm**, and **Rule Base**. The interactions are as follows: an arrow points from the world to Working Memory; Working Memory and the Rule Base both have arrows pointing to the Reasoning Algorithm; the Reasoning Algorithm has an arrow pointing back to Working Memory; and a long curved arrow points from the Reasoning Algorithm back to the world. Handwritten numbers in parentheses are placed near the arrows: (172) near the arrow from Working Memory to Reasoning Algorithm, (173) near the arrow from Rule Base to Reasoning Algorithm, and (174) near the curved arrow from Reasoning Algorithm to the world. Additionally, a handwritten number 171 is placed near the top of the dashed line.

```
graph TD; 176[New Problem] --> 178[Retrieve]; 178 --> 177[Case Library]; 178 --> 179[Adapt]; 179 --> 180[Execute]; 180 --> 181[Embed]; 181 --> 177;
```

The flowchart illustrates the Case-Based Reasoning (CBR) cycle. It begins with a 'New Problem' (labeled 176), which leads to the 'Retrieve' step (labeled 178). From 'Retrieve', the process branches into two paths: one leading to the 'Case Library' (labeled 177) and another leading to the 'Adapt' step (labeled 179). The 'Adapt' step leads to the 'Execute' step (labeled 180), which then leads to the 'Embed' step (labeled 181). Finally, the 'Embed' step leads back to the 'Case Library' (labeled 177), completing the cycle.

Fig. 22

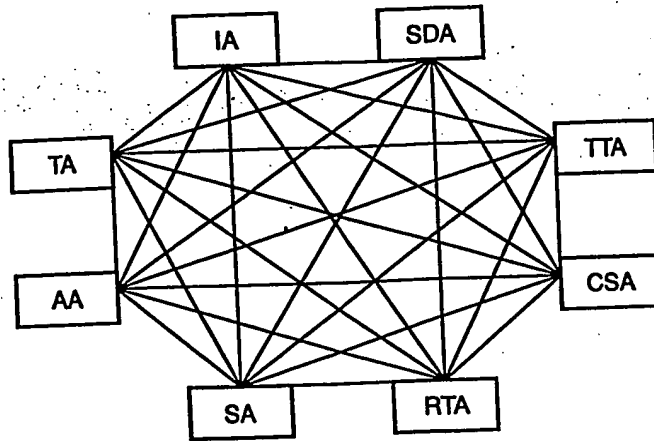


Fig. 23

190

Friday January 5 2001 -191			
	Service 1	Service 2	Service 3
<b>Seattle</b>			
Bldg 1	Up	Up	Down, up at 12 PM
Bldg 2	Down 8-10 PM	Down 8-10 PM	Down 8-10PM
Bldg 3	Up (Slow)	Up	Up
<b>Sydney</b>			
Bldg 1	Up	Up	Down, up ?
Bldg 2	Up	Up (slow)	Up
.			
.			
.			

Fig. 24

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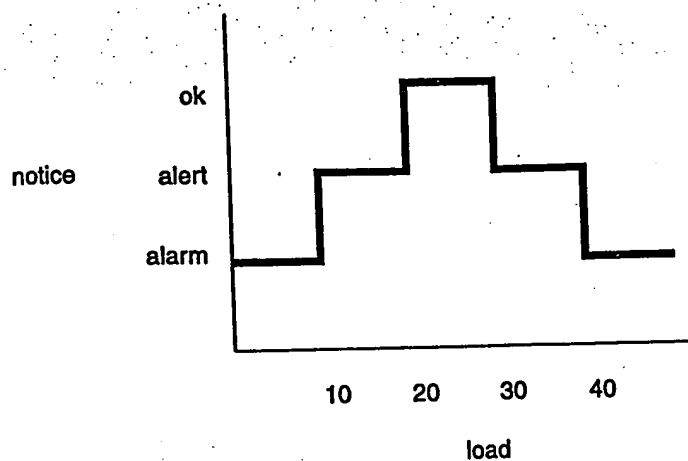


Fig. 25

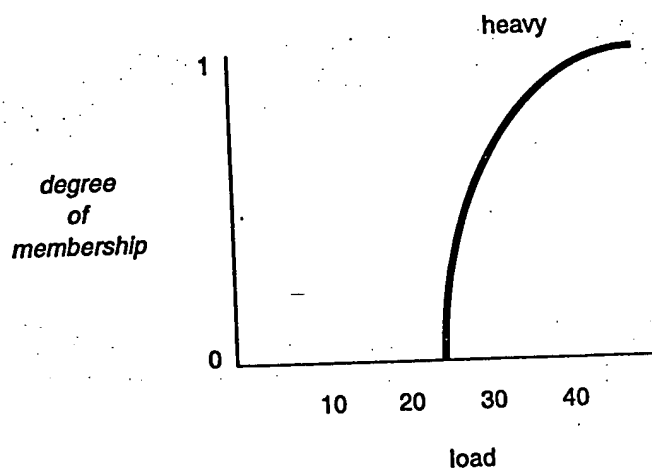


Fig. 26

```
graph TD; 200[Define Grammar] --> 201[Define Membership Functions]; 201 --> 200; 201 --> 202[Define Fuzzy Rules]; 202 --> 201; 202 --> 203[Define Fuzzy Inference Strategy]; 203 --> 202; 203 --> 204[Define Defuzzification Methods]; 204 --> 203; 204 --> production[production];
```

Define Grammar 200

Define Membership Functions 201

Define Fuzzy Rules 202

Define Fuzzy Inference Strategy 203

Define Defuzzification Methods 204

production

Fig. 27

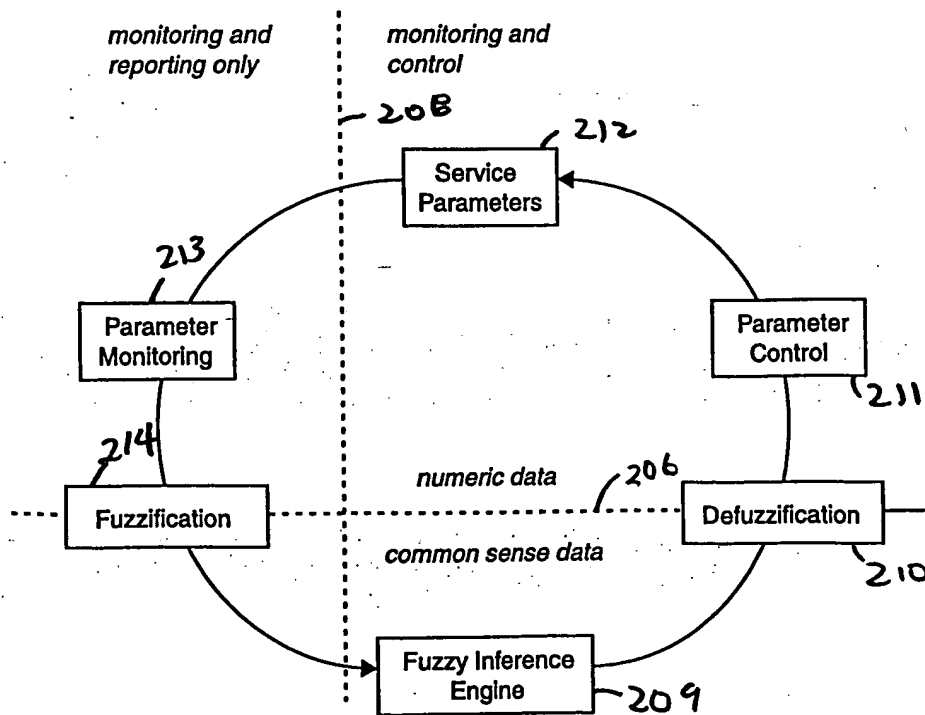


Fig. 28

09577224-05200

possible influences on SP <sup>225</sup>

<sup>224</sup> target

	P1	P2	P3	P4	P5	...	PN	SP
t1	---	---	---	---	---	---	---	---
t2	---	---	---	---	---	---	---	---
t3	---	---	---	---	---	---	---	---
t4	---	---	---	---	---	---	---	---
t5	---	---	---	---	---	---	---	---
t6	---	---	---	---	---	---	---	---
.								
.								
.								

<sup>222</sup>

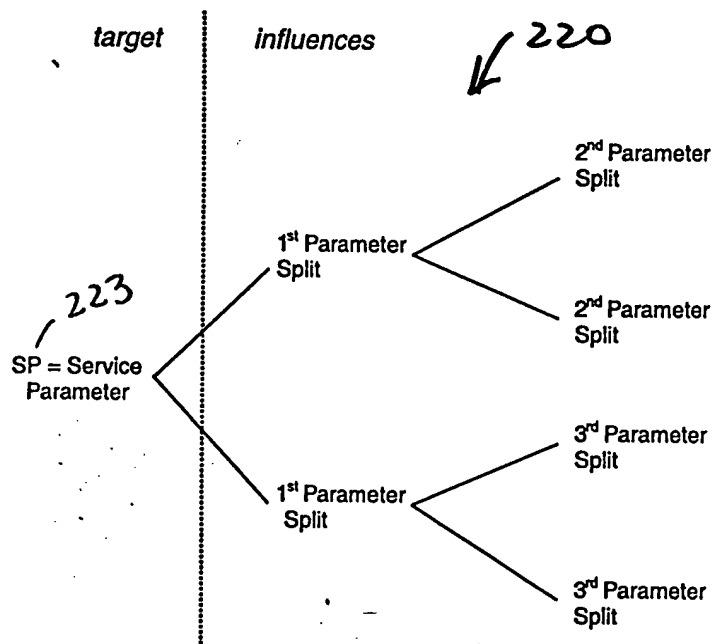


Fig. 29

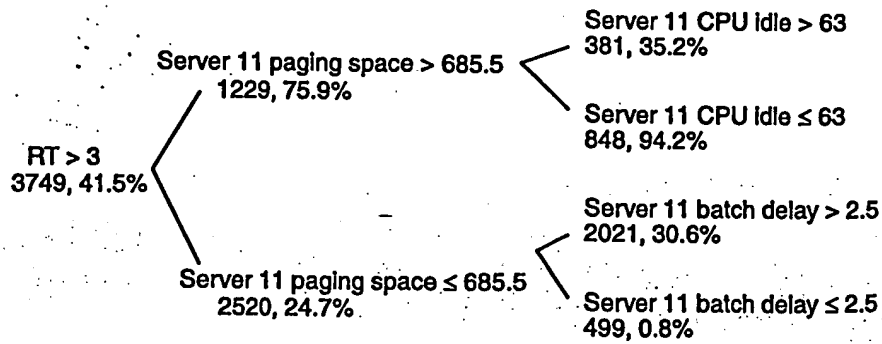


Fig. 30

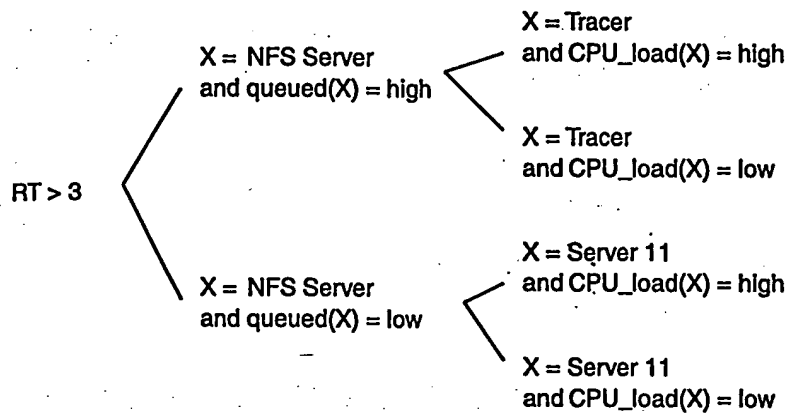


Fig. 31

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230

Service Agreement with XYZ Server Farm						
Name						
Address						
Phone						
Email						
Policies						
Availability		___ (select 90 – 100 %)			\$___	
Response Time		___ (select 2 – 5 sec)			\$___	
Security		___ (select high- med-low)			\$___	
Integrity		___ (select high- med-low)			\$___	
					Total: \$___	
Go Back		(Month)			Go Forward	
Default: Availability ___ Response time ___ Security ___ Integrity___						
Send Cancel						

Fig. 32

Figure 1: High level architecture of the EC Enterprise. The diagram illustrates the flow of data and management functions within the EC Enterprise (250). The enterprise is divided into two main operational modes: off-line, out-of-band management (top) and real-time, in-band management (bottom). The real-time management section includes a central block (256) for Definition, Monitoring, and Control of SLAs, and Event Mgmt., Reporting, Discovery, Event Correlation. This block receives input from a Web Interface (258) and four management blocks: Security Control over Web Servers (251), Management of Network Devices (252), Management of NT and Unix Servers (253), and Inventory, Configuration, Distribution of Software (254). These management blocks send security events, device events, server events, and config events respectively to the central block. The central block sends selected events to a Data Warehouse (262), which then feeds into three reporting blocks: Service Reports via Browser (264), Specialized Reporting (265), and Data Mining for trend analysis (266). The central block also sends faults to three other blocks: Multidomain Alarm Correlation (259), Fault Notification (260), and Automated Fault Repair (261). A label 263 is also present near the top right.

Fig. 33

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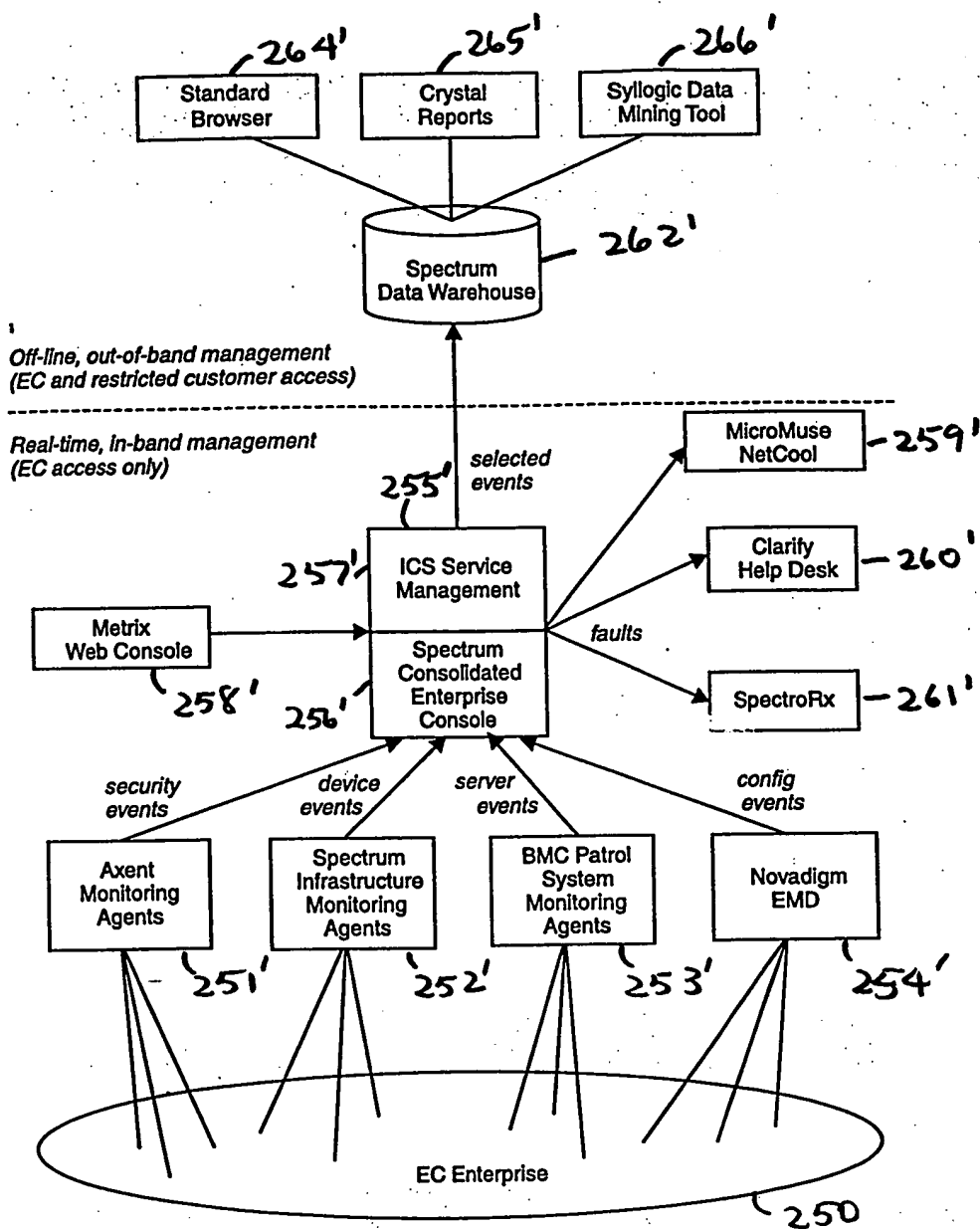


Fig. 34

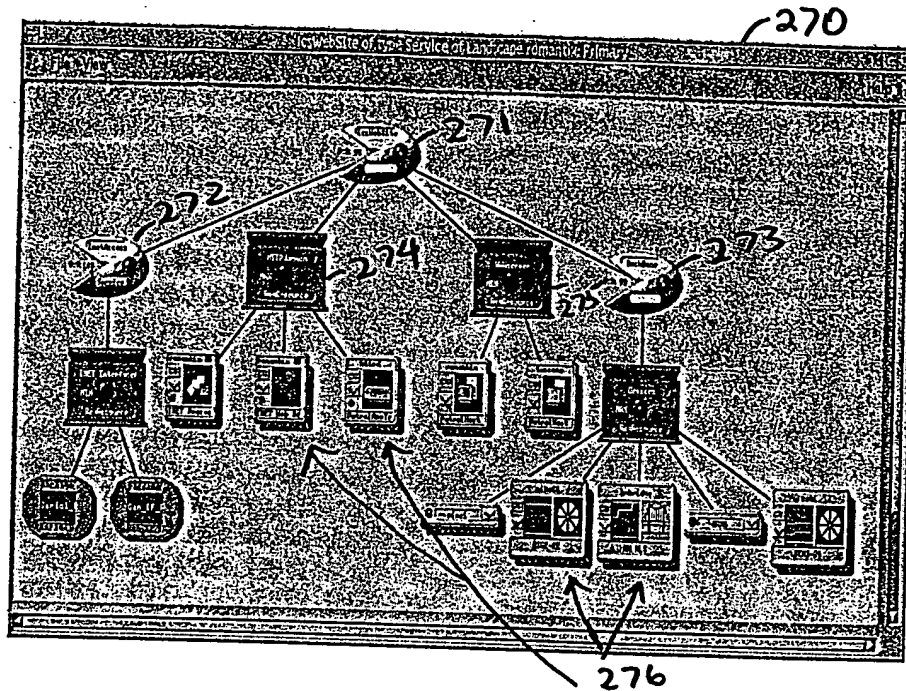
[illegible]

Fig. 35

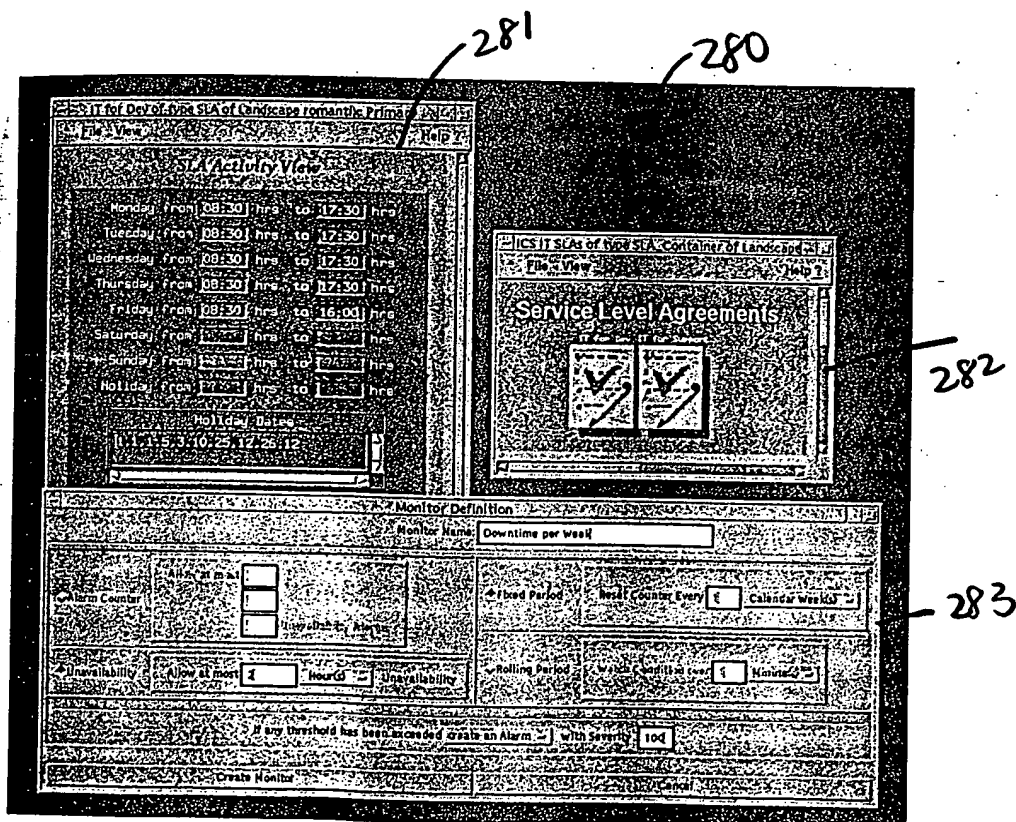


Fig. 36

282



005724-05200

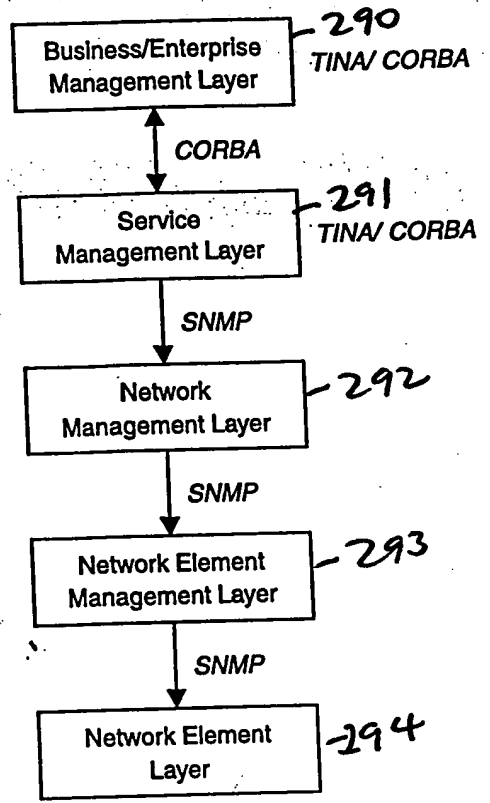


Fig. 37

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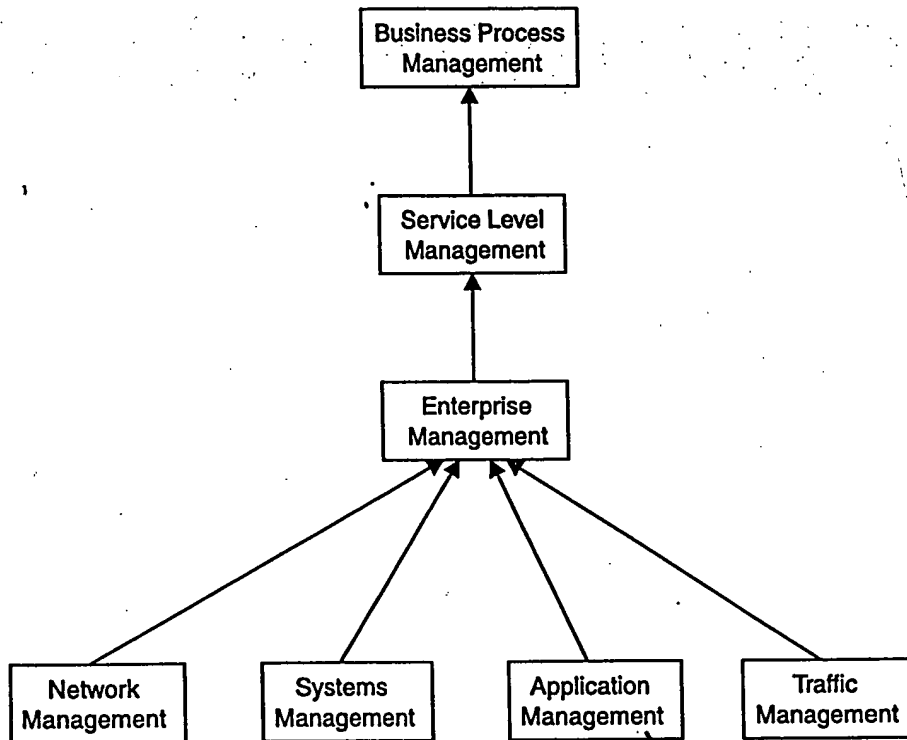


Fig. 38